

Henry Cheng
Serial No.: 09/643,981
Response to Office Action dated October 5, 2004

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Original): A mixer for mixing sound signals, comprising:

a mixer buffer for storing sample values for three or more sound channels, each sound channel including a main sound component and one or more auxiliary sound components;

send paths for sending the auxiliary sound components for each sound channel to a sound effects processor; and

return paths from the sound effects processor for respectively adding the effects-processed auxiliary sound components for each channel to the corresponding main sound component.

Claim 2 (Original): The mixer according to claim 1, further comprising:

mixer volume controls for independently controlling the volume of the main and auxiliary sound components of each sound channel supplied to the mixer buffer.

Claim 3 (Original): The mixer according to claim 1, further comprising:

a surround encoder,

wherein the mixer buffer comprises left, right and surround sound channels and the surround encoder encodes information on the surround sound channel, including the effects-processed auxiliary sound components added to the surround channel, onto the left and right sound channels.

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Claim 4 (Original): The mixer according to claim 1, wherein the sample values for three or more sound channels are accumulated for a plurality of voices

Claim 5 (Original): A sound effects processing system comprising:

a sound effects processor; and

a mixer comprising:

a mixer buffer for storing sample values for three or more sound channels, each sound channel including a main sound component and one or more auxiliary sound components;

send paths for sending the auxiliary sound components for each sound channel to the sound effects processor; and

return paths from the sound effects processor for respectively adding the effects-processed auxiliary sound components for each channel to the corresponding main sound component.

Claim 6 (Original): The system according to claim 5, wherein the mixer further comprises:

mixer volume controls for independently controlling the volume of the main and auxiliary sound components of each sound channel supplied to the mixer buffer.

Claim 7 (Original): The system according to claim 5, wherein

the mixer further comprises a surround encoder, and

the mixer buffer comprises left, right and surround sound channels and the surround encoder encodes information on the surround sound channel, including the effects-processed auxiliary sound components added to the surround channel, onto the left and right sound channels.

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Claim 8 (Original): The system according to claim 5, wherein the sample values for three or more sound channels are accumulated for a plurality of voices.

Claim 9 (Original): The system according to claim 5, wherein the sound effects processor provides reverb to the auxiliary sound components for each sound channel.

Claim 10 (Original): The system according to claim 5, wherein the sound effects processor provides delay to the auxiliary sound components for each sound channel.

Claim 11 (Original): The system according to claim 5, wherein the sound effects processor provides chorus to the auxiliary sound components for each sound channel.

Claim 12 (Original): The system according to claim 5, wherein the sound effects processor processes the auxiliary sound components for each sound channel using the same sound effects parameters.

Claim 13 (Original): The system according to claim 5, wherein the sound effects processor processes the auxiliary sound components for each sound channel using different sound effects parameters.

Claim 14 (Original): A video game system comprising:
a video game machine for executing a video game program; and
a hand-held player controller connected to said video game machine and operable by a player to generate video game control signals for the video game program,

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wherein said video game machine includes an audio system for generating sound signals for driving speakers, said audio system comprising:

a sound effects processor; and

a mixer comprising:

a mixer buffer for storing sample values for three or more sound channels, each sound channel including a main sound component and one or more auxiliary sound components;

send paths for sending the auxiliary sound components for each sound channel to the sound effects processor; and

return paths from the sound effects processor for respectively adding the effects-processed auxiliary sound components for each channel to the corresponding main sound component.

Claim 15 (Original): The system according to claim 14, wherein the mixer further comprises:

mixer volume controls for independently controlling the volume of the main and auxiliary sound components of each sound channel supplied to the mixer buffer.

Claim 16 (Original): The system according to claim 14, wherein

the mixer further comprises a surround encoder, and

the mixer buffer comprises left, right and surround sound channels and the surround encoder encodes information on the surround sound channel, including the effects-processed auxiliary sound components added to the surround channel, onto the left and right sound channels.

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Claim 17 (Original): The system according to claim 14, wherein the sample values for three or more sound channels are accumulated for a plurality of voices.

Claim 18 (Original): The system according to claim 14, wherein the sound effects processor provides reverb to the auxiliary sound components for each sound channel.

Claim 19 (Original): The system according to claim 14, wherein the sound effects processor provides delay to the auxiliary sound components for each sound channel.

Claim 20 (Original): The system according to claim 14, wherein the sound effects processor provides chorus to the auxiliary sound components for each sound channel.

Claim 21 (Original): The system according to claim 14, wherein the sound effects processor processes the auxiliary sound components for each sound channel using the same sound effects parameters.

Claim 22 (Original): The system according to claim 14, wherein the sound effects processor processes the auxiliary sound components for each sound channel using different sound effects parameters.

Claim 23 (Original): In an audio system, a method of mixing sound signals, comprising:

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storing sample values for three or more sound channels, each sound channel including a main sound component and one or more auxiliary sound components;

sending the auxiliary sound components for each sound channel to a sound effects processor; and

respectively adding the effects-processed auxiliary sound components for each channel to the corresponding main sound component.

Claim 24 (Original): The method according to claim 23, further comprising:
independently controlling the volume of the main and auxiliary sound components of each sound channel.

Claim 25 (Original): The method according to claim 23, wherein the three or more sound channels include left, right and surround sound channels and information on the surround sound channel, including the effects-processed auxiliary sound components added to the surround channel, are encoded onto the left and right sound channels.

Claim 26 (Original): The method according to claim 23, wherein the sample values for three or more sound channels are accumulated for a plurality of voices.

Claim 27 (Original): The method according to claim 23, wherein the sound effects processor provides reverb to the auxiliary sound components for each sound channel.

Claim 28 (Original): The method according to claim 23, wherein the sound effects processor provides delay to the auxiliary sound components for each sound channel.

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Claim 29 (Original): The method according to claim 23, wherein the sound effects processor provides chorus to the auxiliary sound components for each sound channel.